

Docket No.: 122.1488

Serial No. 10/075,027

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 2, 4, 6, 9, 11 and 13 AND AMEND claims 1, 3, 5, 7, 8, 10, 12, 14 and 15 and ADD new claims 16-18 in accordance with the following:

1. (CURRENTLY AMENDED) A system for dispersing the load of a network in data communications between a ~~central computer~~monitoring unit and a plurality of remote nodes that are connected to the ~~central computer~~monitoring unit via a broadband network, wherein the ~~central computer~~monitoring unit comprises:

a communication order determining unit that determines an order of communications between the ~~central computer~~monitoring unit and the plurality of remote nodes, in order to avoid local traffic congestion in a communication route within the broadband network;

a communication interval determining unit that determines a communication interval between a remote node with which the ~~central computer~~monitoring unit communicates ~~this a first~~a next time and a remote node with which the ~~central computer~~monitoring unit communicates a next time, among the plurality of remote nodes that communicate with the ~~central computer~~monitoring unit; and

a communication control unit that controls data communications between the ~~central computer~~monitoring unit and the plurality of remote nodes, according to the communication order and the communication interval; and

the communication interval determining unit determines the communication interval by dividing a repetition period, required for repetitively executing communications with all of the plurality of remote nodes, by a total number of the plurality of remote nodes, yielding a quotient from which is subtracted a processing time per single node thereby to obtain the communication interval, the communication interval including a communication waiting time.

2. (CANCELLED)

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3. (CURRENTLY AMENDED) The system for dispersing the load of a network, according to claim 1, wherein:

~~the plurality of remote nodes are~~ is divided into groups, each group associated with a respective, individual transmission line and comprising plural remote nodes of a plurality of transmission lines; and

~~the operating frequency of each that the transmission lines divided into the groups are used for communications~~ is increased in proportion to the number of remote nodes of the respective group with which the transmission line is used that are accommodated in the divided groups of transmission lines; and

the monitoring unit further comprises a polling execution determining unit determining the order of transmission lines to be used for polling the divided nodes of the plural groups to be monitored, selecting one transmission line according to the determined order of the transmission lines to be used for the polling, judging whether the polling executed the number of nodes corresponding to the transmission line that has been selected; comparing a ratio of the total number of nodes, divided by the number of nodes accommodated by the selected transmission line, with a ratio of the total polling executed node number divided by the number of nodes executed in each of the transmission lines; determining whether the polling in the transmission line should be executed, or not, executing the polling of one new node to be monitored and updating the total polling executed number and the polling executed number for each transmission line, and repeating said determining, selecting, judging, comparing, determining and executing of the polling execution determining unit.

4. (CANCELLED)

5. (CURRENTLY AMENDED) The system for dispersing the load of a network according to claim 1, wherein:

~~the plurality of remote nodes are divided into groups of a plurality of transmission lines,~~ and

~~the operating frequency of each that the transmission lines divided into the groups are used for communications~~ is increased in proportion to the respective line speeds of the divided transmission lines.

6. (CANCELLED)

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7. (CURRENTLY AMENDED) A system for dispersing the load of a network in a monitoring unit that carries out polling to a plurality of remote nodes, to be monitored, that are connected via a broadband network, wherein the monitoring unit comprises:

a polling order determining unit that determines an order of polling the plurality of nodes to be monitored;

a polling interval determining unit that determines a polling interval between the nodes to be monitored; and

a control unit that controls the monitoring unit to carry out polling of the plurality of nodes to be monitored, according to the polling order and the polling interval; and

a communication interval determining unit that determines the communication interval by dividing a repetition period, required for repetitively executing communications with all of the plurality of remote nodes, by a total number of the plurality of remote nodes, yielding a quotient from which is subtracted a processing time per single node thereby to obtain the communication interval, the communication interval including a communication waiting time.

8. (CURRENTLY AMENDED) A method of dispersing the load of a network in data communications between a central computer monitoring unit and a plurality of remote nodes that are connected to the central computer monitoring unit via a broadband network, the method comprising the steps of:

determining an order of communications between the central computer monitoring unit and the plurality of remote nodes, in order to avoid local traffic congestion in a communication route within the broadband network;

determining a communication interval between a remote node with which the central computer monitoring unit communicates a first time and a remote node with which the central computer monitoring unit communicates a next time, among the plurality of remote nodes that communicate with the central computer monitoring unit; and

controlling data communications between the central computer monitoring unit and the plurality of remote nodes, according to the communication order and the communication interval; and

determining the communication interval by dividing a repetition period, required for repetitively executing communications with all of the plurality of remote nodes by a total number of the plurality of remote nodes, yielding a quotient from which is subtracted a processing time per single node thereby to obtain the communication interval, the communication interval

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including a communication waiting time.

9. (CANCELLED)

10. (CURRENTLY AMENDED) The method of dispersing the load of a network, according to claim 8, wherein

the plurality of remote nodes are divided into groups of a plurality of transmission lines, and

the frequency that the transmission lines divided into the groups are used for communications is increased in proportion to the number of remote nodes that are accommodated in the divided groups of transmission lines; and

determining the order of transmission lines to be used for polling the divided nodes of the plural groups to be monitored, selecting one transmission line according to the determined order of the transmission lines to be used for the polling, judging whether the polling executed the number of nodes corresponding to the transmission line that has been selected; comparing a ratio of the total number of nodes, divided by the number of nodes accommodated by the selected transmission line, with a ratio of the total polling executed node number divided by the number of nodes executed in each of the transmission lines; determining whether the polling in the transmission line should be executed, or not, executing the polling of one new node to be monitored and updating the total polling executed number and the polling executed number for each transmission line, and repeating said determining, selecting, judging, comparing, determining and executing of the polling execution determining unit.

11. (CANCELLED)

12. (CURRENTLY AMENDED) The method of dispersing the load of a network, according to claim 8, wherein

the plurality of remote nodes are divided into groups of a plurality of transmission lines, and

the frequency that the transmission lines divided into the groups are used for communications is increased in proportion to the line speeds of the divided transmission lines; and

determining the communication interval by dividing a repetition period, required for repetitively executing communications with all of the plurality of remote nodes by a total number

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of the plurality of remote nodes, yielding a quotient from which is subtracted a processing time per single node thereby to obtain the communication interval, the communication interval including a communication waiting time.

13. (CANCELLED)

14. (CURRENTLY AMENDED) A method of dispersing the load of a network in a monitoring unit that carries out polling to a plurality of nodes to be monitored that are connected via a broadband network, the method comprising the steps of:

determining an order of polling the plurality of nodes to be monitored;

determining a polling interval between the nodes to be monitored; and

controlling the monitoring unit to carry out polling of the plurality of nodes to be monitored, according to the polling order and the polling interval; and

determining the communication interval by dividing a repetition period, required for repetitively executing communications with all of the plurality of remote nodes by a total number of the plurality of remote nodes, yielding a quotient from which is subtracted a processing time per single node thereby to obtain the communication interval, the communication interval including a communication waiting time.

15. (CURRENTLY AMENDED) A computer-readable recording medium recorded with a program that is used in a system for dispersing the load of a network in data communications between a ~~central computer monitoring unit~~ and a plurality of remote nodes that are connected to the ~~central computer monitoring unit~~ via a broadband network, wherein

the recording medium has been recorded with a program for making the ~~central computer monitoring unit~~ function as:

a communication order determining unit that determines an order of communications between the ~~central computer monitoring unit~~ and the plurality of remote nodes, in order to avoid local traffic congestion in a communication route within the broadband network;

a communication interval determining unit that determines a communication interval between a remote node with which the ~~central computer monitoring unit~~ communicates this time and a remote node with which the ~~central computer monitoring unit~~ communicates next time, among the plurality of remote nodes that communicate with the ~~central computer monitoring unit~~; and

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a communication control unit that controls data communications between the central ~~computer~~monitoring unit and the plurality of remote nodes, according to the communication order and the communication interval and determines the communication interval by dividing a repetition period, required for repetitively executing communications with all of the plurality of remote nodes by a total number of the plurality of remote nodes, yielding a quotient from which is subtracted a processing time per single node thereby to obtain the communication interval, the communication interval including a communication waiting time.

16. (NEW) A system for dispersing the load of a network in a monitoring unit that carries out polling to a plurality of nodes to be monitored that are connected via a broadband network, wherein:

the monitoring unit comprises:

a polling order determining unit that determines an order of polling the plurality of nodes to be monitored;

a polling interval determining unit that determines a polling interval between the nodes to be monitored; and

a control unit that controls the monitoring unit to carry out polling of the plurality of nodes to be monitored, according to the polling order and the polling interval and determines the order of transmission lines to be used for polling the divided nodes of the plural groups to be monitored, selecting one transmission line according to the determined order of the transmission lines to be used for the polling, judging whether the polling executed the number of nodes corresponding to the transmission line that has been selected; comparing a ratio of the total number of nodes, divided by the number of nodes accommodated by the selected transmission line, with a ratio of the total polling executed node number divided by the number of nodes executed in each of the transmission lines; determining whether the polling in the transmission line should be executed, or not, executing the polling of one new node to be monitored and updating the total polling executed number and the polling executed number for each transmission line, and repeating said determining, selecting, judging, comparing, determining and executing of the polling execution determining unit.

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17. (NEW) A method of dispersing the load of a network in a monitoring unit that carries out polling to a plurality of nodes to be monitored that are connected via a broadband network, the method comprising:

- determining an order of polling the plurality of nodes to be monitored;
- determining a polling interval between the nodes to be monitored; and
- controlling the monitoring unit to carry out polling of the plurality of nodes to be monitored, according to the polling order and the polling interval; and

determining the order of transmission lines to be used for polling the divided nodes of the plural groups to be monitored, selecting one transmission line according to the determined order of the transmission lines to be used for the polling, judging whether the polling executed the number of nodes corresponding to the transmission line that has been selected; comparing a ratio of the total number of nodes, divided by the number of nodes accommodated by the selected transmission line, with a ratio of the total polling executed node number divided by the number of nodes executed in each of the transmission lines; determining whether the polling in the transmission line should be executed, or not, executing the polling of one new node to be monitored and updating the total polling executed number and the polling executed number for each transmission line, and repeating said determining, selecting, judging, comparing, determining and executing of the polling execution determining unit.

18. (NEW) A computer-readable recording medium recorded with a program that is used in a system for dispersing the load of a network in data communications between a monitoring unit and a plurality of remote nodes that are connected to the monitoring unit via a broadband network, wherein:

the recording medium has been recorded with a program for making the monitoring unit function as:

- a communication order determining unit that determines an order of communications between the monitoring unit and the plurality of remote nodes, in order to avoid local traffic congestion in a communication route within the broadband network;

- a communication interval determining unit that determines a communication interval between a remote node with which the monitoring unit communicates this time and a remote node with which the monitoring unit communicates next time, among the plurality of remote nodes that communicate with the monitoring unit; and

- a communication control unit that controls data communications between the monitoring

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unit and the plurality of remote nodes, according to the communication order and the communication interval; and

a polling execution determining unit that determines the order of transmission lines to be used for polling the divided nodes of the plural groups to be monitored, selecting one transmission line according to the determined order of the transmission lines to be used for the polling, judging whether the polling executed the number of nodes corresponding to the transmission line that has been selected; comparing a ratio of the total number of nodes, divided by the number of nodes accommodated by the selected transmission line, with a ratio of the total polling executed node number divided by the number of nodes executed in each of the transmission lines; determining whether the polling in the transmission line should be executed, or not, executing the polling of one new node to be monitored and updating the total polling executed number and the polling executed number for each transmission line, and repeating said determining, selecting, judging, comparing, determining and executing of the polling execution determining unit.